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Economics of Management Options for Lake McConaughy

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The amount of water stored in Lake McConaughy reached a historical low in the Fall of 2004 and again in 2006. In 2005 and 2006 CNPPID irrigators received less than a full supply of Lake McConaughy water for the first time since the system came on line over 60 years ago. Electric power interests, recreation interests and the regional economy have also been adversely affected by low water levels. What, if anything should the State of Nebraska do to minimize the adverse impacts from this situation and/or prevent it from developing again in the future?

The most critical policy issue concerns the potential effects of diminished water supplies on irrigation, hydropower, recreation resources and the regional economy. The policy choices consist of leaving more water in Lake McConaughy during drought periods, reducing upstream groundwater irrigation, and investments to provide directly for regional economic development.¹ Economists at UNL recently analyzed the effects of Lake McConaughy management options on the different water using groups and on the regional economy (Supalla et al., 2006). They found that:

- McConaughy recreation use has varied from about 400,000 to 800,000 visitor days per year since 1984.
- That McConaughy recreation use in 2004 was only 391,000 visitor days, which is 32 percent below the most recent 10 year average.
- Adding 100,000 acre-feet of water when the reservoir is at 20 percent of capacity would increase recreation use by 53,000 visitor days per year, assuming average weather.
- Adding 100,000 acre-feet of water when the reservoir is at 20 percent of capacity would be worth \$1.4 million per year to recreation users, consisting of 53,000 visitor days of additional use at \$14.43 per day, plus an improvement value of \$1.42 per day for all users.

The cost of leaving more water in McConaughy for recreation comes at the expense of reduced irrigation or hydropower. Whether or not the irrigation and hydropower costs from leaving more water in the reservoir during drought periods are greater or less than the recreation benefits, however, depends on how quickly the reservoir refills. This is because the costs to irrigation and hydropower are incurred only for one year while the benefits to recreation continue for several years if the reservoir is slow to refill. If the reservoir refills slowly so that most of the recreation benefits continue for three years or more, then diverting less water for irrigation or hydropower when reservoir levels are very low may be economically justified, i.e., the total recreation benefits are likely to exceed the costs to irrigation and hydropower. Augmenting the reservoir by reducing winter releases for hydropower production is the option most likely to be cost effective, because it was found to be less costly than reducing irrigation by a similar amount during the summer months.

Supalla found that augmenting McConaughy during dry periods would provide substantial recreation benefits, but would not significantly improve the regional economy. This unexpected finding is due to the fact that McConaughy recreation users spend relatively little money in the region. Recreation use is dominated by fishing and camping, and although 87 percent of users stay overnight, only 4 percent stay in area motels. The typical user stocks his camper before leaving home, stays in a state campground for a modest fee, cooks instead of eating in area restaurants, buys a little bait and maybe a tank of gas and returns home.. There are no high-end resort hotels or extensive recreation services to induce local spending.

This is not to say that McConaughy related recreation does not offer the potential for contributing substantially to economic development. There are opportunities for recreation investments that contribute to regional economic development, but leaving more water in the reservoir to produce more fishing and camping is probably not the most cost effective economic development strategy. Public officials interested in inducing economic development in the McConaughy area should consider other investments such as additional low water boat ramps improved public infrastructure on the south side of the lake (water, sewer, electrical and roads) and expanded recreation opportunities (horseback riding, hiking trails, ATV riding areas, wildlife viewing, fall hunting, golf and/or a resort hotel).

Any program to provide for improved recreation opportunities during drought periods and/or to provide for recreation related economic development will require some public funding, whether it be for infrastructure, expanded recreation options or compensation to Central Nebraska Public Power and Irrigation District (CNPPID) for adjusting their operations to meet public needs. Public officials may want to consider raising fishing, camping or park fees to raise funds for this purpose. A survey of Lake McConaughy users found that 80 percent would be willing to pay additional fees for maintaining more water in the reservoir. Survey respondents also indicated strong support for substantially increasing the fees paid by the over 60 percent of McConaughy users who are from out-of-state.

Supalla, Raymond J., T. Buell and S. Stricker, “Economics of Management Options for Lake McConaughy,” Department of Agricultural Economics Research Report No. ___, University of Nebraska – Lincoln (forthcoming).

¹ The amount of water in storage could be increased by either reducing releases or increasing inflows, but the Supalla analysis considered only reduced releases. Increasing inflows by reducing upstream water use, especially groundwater pumping, is an equally important option that will be considered in subsequent research.